Introduction

This installation guide provides instructions for installation, startup, and adjustment. To receive a copy of the instruction manual, contact your local Sales Office or view a copy at www.fisherregulators.com. For further information refer to: Type 1290 Instruction Manual, form 5308, D101645X012.

The Type 1290 vapor recovery regulator is a self-contained, pilot-operated regulator used for vapor recovery of blanketing gas.

P.E.D. Categories

This product may be used as a pressure accessory with pressure equipment in the following Pressure Equipment Directive 97/23/EC categories. It may also be used outside of the Pressure Equipment Directive using sound engineering practice (SEP) per table below.

PRODUCT SIZES	CATEGORIES	FLUID TYPE
DN 25 / NPS 1	SEP	1
DN 50, 80, 100, and 150 / NPS 2, 3, 4, and 6	II	

Specifications

Body Size and End Connection Style

BODY SIZE		MAIN VALVE END CONNECTION STYLE	
NPS	DN	Cast Iron	WCC Steel or CF8M Stainless Steel
1 or 2	25 or 50	NPT, CL125 FF, or CL250 RF flanged	NPT, SWE, BWE, CL150 RF, CL300 RF, CL600 RF, or PN 16/25/40 flanged
3, 4, or 6	80, 100, or 150	CL125 FF or CL250 RF flanged	BWE, CL150 RF, CL300 RF, CL600 RF, or PN 16 flanged
8 x 6 or 12 x 6	200 x 150 or 300 x 150	- - - -	BWE, CL150 RF, CL300 RF, CL600 RF, or PN 25 flanged

Maximum Main Valve Inlet Pressure(1)
1.4 bar / 20 psig

Maximum Differential Pressure(1)
2.4 bar / 35 psi

Outlet (Control) Pressure Ranges(1)(2)

Type Y291AL:
1 to 4 mbar / 0.5 to 1.5-inches w.c.(3)

Type Y291A:
2 to 6 mbar / 1 to 2.5-inches w.c.(3)(4)
5 to 17 mbar / 2 to 7-inches w.c.(3)(5)
10 to 35 mbar / 4 to 14-inches w.c.
30 to 70 mbar / 12 to 28-inches w.c.
0.69 to 0.17 bar / 1.0 to 2.5 psig
0.17 to 0.31 bar / 2.5 to 4.5 psig
0.31 to 0.48 bar / 4.5 to 7 psig

1. The pressure/temperature limits in this Installation Guide and any applicable standard or code limitation should not be exceeded.
2. Spring ranges based on pilot being installed with the spring case pointed down.
3. Do not use fluorocarbon (FKM) diaphragm with this spring at diaphragm temperatures lower than 16°C / 60°F.
4. When using a fluorocarbon (FKM) diaphragm, the minimum outlet pressure is 5 mbar / 2-inches w.c.
5. When using a fluorocarbon (FKM) diaphragm, the minimum outlet pressure is 6 mbar / 2.5-inches w.c.

Proof Test Pressure
All Pressure Retaining Components have been proof tested per Directive 97/23/EC - Annex 1, Section 7.4.

Type 95H Supply Pressure Settings(1)

PILOT TYPE	TYPE 1098-EGR MAIN VALVE WITH GREEN SPRING, DN / NPS				SPRING COLOR
	25, 50, 80, or 100 / 1, 2, 3, or 4		150 / 6		
	bar	psig	bar	psig	
Y291AL	0.55	8	0.90	13	Black
Y291A	0.55	8	0.90	13	Orange
	0.55	8	0.90	13	Red
	0.62	9	0.97	14	Unpainted
	0.69	10	0.97	14	Yellow
	0.76	11	1.0	15	Green
	0.97	14	1.2	18	Light Blue
	1.0	15	1.4	20	Black

Temperature Capabilities(1)

Nitrile (NBR) / Neoprene (CR):
-29° to 82°C / -20° to 180°F

Fluorocarbon (FKM):
For Inches w.c. Setpoints:
4° to 149°C / 40° to 300°F
For psig Setpoints:
-18° to 149°C / 0° to 300°F

Perfluoroelastomer (FFKM):
-29° to 149°C / -20° to 300°F

Ethylenepropylene (EPDM):
-29° to 135°C / -20° to 275°F

Installation

WARNING

Only qualified personnel should install or service a backpressure regulator. Backpressure regulators should be installed, operated, and maintained in accordance with international and applicable codes and regulations, and Emerson Process Management Regulator Technologies, Inc. instructions.

If using a backpressure regulator on a hazardous or flammable fluid service, personal injury and property damage could occur due to fire or explosion of vented fluid that may have accumulated. To prevent such injury or damage, provide piping or tubing to vent the fluid to a safe, well-ventilated area or containment vessel. Also, when venting a hazardous fluid, the piping or tubing should be located far enough away from any buildings or windows so to not create a further hazard, and the vent opening should be protected against anything that could clog it.

Personal injury, equipment damage, or leakage due to escaping fluid or bursting of

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pressure-containing parts may result if this backpressure regulator is overpressured or is installed where service conditions could exceed the limits given in the Specifications section, or where conditions exceed any ratings of the adjacent piping or piping connections.

To avoid such injury or damage, provide pressure-relieving or pressure-limiting devices (as required by the appropriate code, regulation, or standard) to prevent service conditions from exceeding limits.

Additionally, physical damage to the backpressure regulator could result in personal injury and property damage due to escaping fluid. To avoid such injury and damage, install the backpressure regulator in a safe location.

Clean out all pipelines before installation of the backpressure regulator and check to be sure the backpressure regulator has not been damaged or has collected foreign material during shipping. For NPT bodies, apply pipe compound to the external pipe threads. For flanged bodies, use suitable line gaskets and approved piping and bolting practices. Install the backpressure regulator in any position desired, unless otherwise specified, but be sure flow through the body is in the direction indicated by the arrow on the body.

Note

It is important that the backpressure regulator be installed so that the vent hole in the spring case is unobstructed at all times. For outdoor installations, the backpressure regulator should be located away from vehicular traffic and positioned so that water, ice, and other foreign materials cannot enter the spring case through the vent. Avoid placing the backpressure regulator beneath eaves or downspouts, and be sure it is above the probable snow level.

Overpressure

The recommended pressure limitations are stamped on the regulator nameplate. Some type of overpressure protection is needed if the actual inlet pressure exceeds the maximum operating outlet pressure rating. Overpressure protection should also be provided if the regulator inlet pressure is greater than the safe working pressure of the downstream equipment.

Regulator operation below the maximum pressure limitations does not preclude the possibility of damage from external sources or debris in the line. The regulator should be inspected for damage after any overpressure condition.

Startup

The backpressure regulator control spring is factory set at a setpoint specified in the order. If no setpoint is specified, the control spring is set at approximately the midpoint of the spring range, so an initial adjustment may be required to give the desired result. With proper installation completed and relief valves properly adjusted, slowly open the upstream and downstream shutoff valves (if applicable).

Adjustment

To change the outlet pressure, remove closing cap or loosen the locknut and turn the adjusting screw clockwise to increase outlet pressure or counterclockwise to decrease pressure. Monitor the outlet pressure with a test gauge during the adjustment. Replace closing cap or tighten the locknut to maintain the desired setting.

Taking Out of Service (Shutdown)

WARNING

To avoid personal injury resulting from sudden release of pressure, isolate the backpressure regulator from all pressure before attempting disassembly.

Parts List

Design Type EGR Main Valve (Figure 1)

Key	Description
1	Body
2	Body Flange
3	Cap Screw
3	Stud Bolt
4	Gasket
5	Lower Indicator Fitting
6	O-ring Retainer
7	Travel Indicator Stem O-Ring
8	Hex Nut
9	Main Valve Spring
10	Lower Indicator Stem
11	Cage
12	Port Seal
13	Seat Ring
15	Upper Seal
16	Valve Plug
17	Cage O-Ring
18	Indicator Scale
19	Travel Indicator Protector
21	Indicator Fitting O-ring
22	Flange Nut
23	E-Ring
24	Drive Screw
25	Flow Arrow
27	Indicator Plug
28	Spring Seat
31	Pipe Plug
35	Indicator Fitting
36	Back-up Ring
37	Travel Indicator O-ring

Type 1098 Actuator, Size 40 (Figure 2)

Key	Description
1	Lower Diaphragm Case
2	Upper Diaphragm Case
3	Bonnet
4	Cap Screws
5	Casing O-Ring
6	Stem O-Ring
7	Diaphragm
8	Diaphragm Plate
9	Stem Cap Screw
10	Cap Screw
11	Hex Nut
12	Stem
13	Nameplate
27	Type Y602-12 Vent Assembly
28	Grease Fitting
56	Bearing
57	Wiper Ring

Type 95H Regulator (Figure 3)

Key	Description
1	Regulator Body
2	Spring Case
3	Orifice
4	Valve Plug
5	Valve Plug Guide
6	Stem Assembly
7	Stem Guide Bushing
8	Lower Spring Seat
9	Upper Spring Seat
10	Valve Plug Spring
11	Regulator Spring
12	Diaphragm
15	Adjusting Screw
16	Cap Screw
17	Jam Nut
20	Pitot Tube

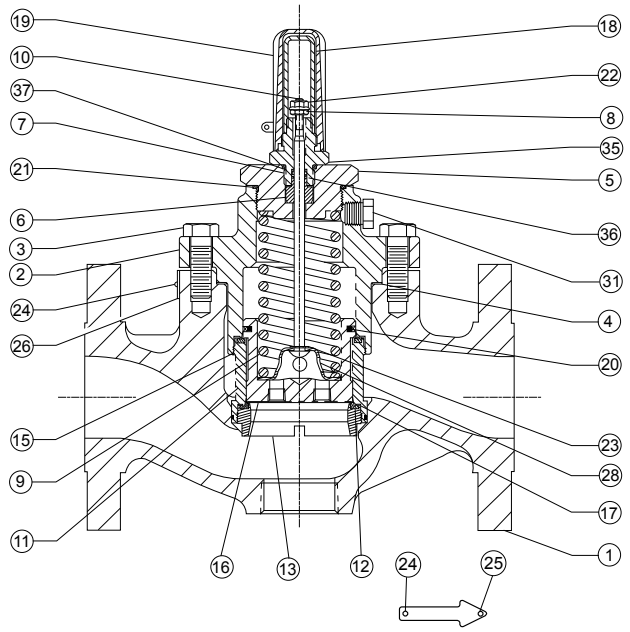

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Figure 1. *Type EGR Main Valve Assembly*

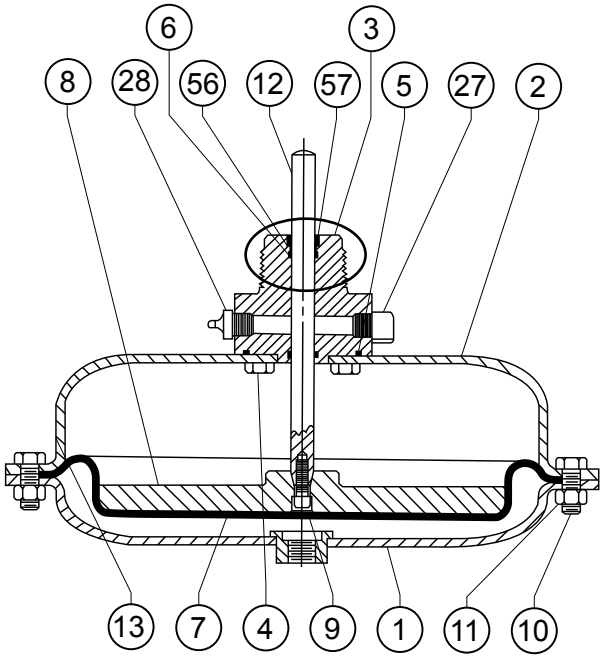

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Figure 2. *Type 1098 Actuator Assembly*

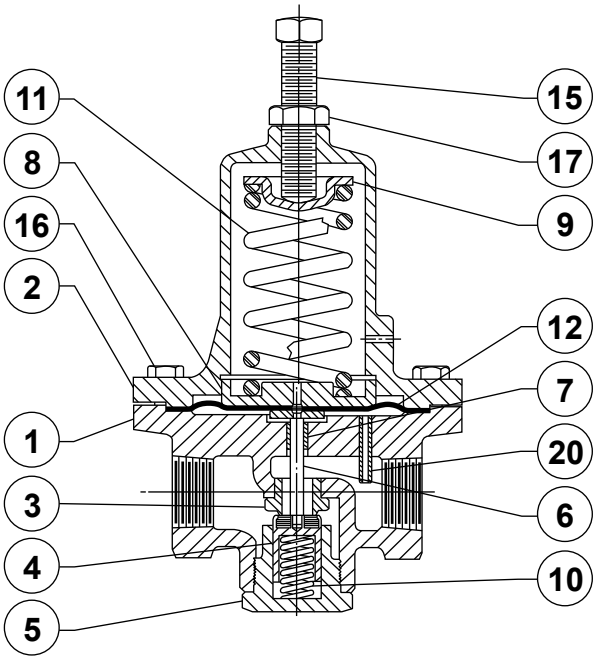

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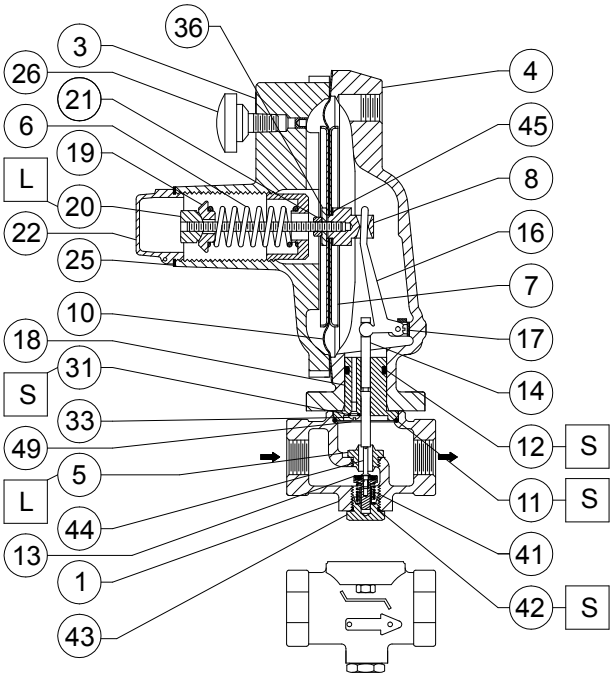
Figure 3. *Type 95H Supply Pressure Regulator Assembly*



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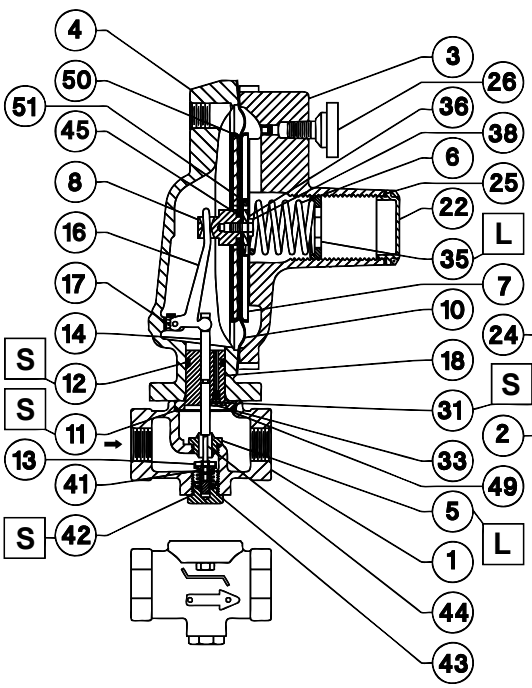
☐ **- APPLY LUBRICANT (L) / SEALANT (S)**

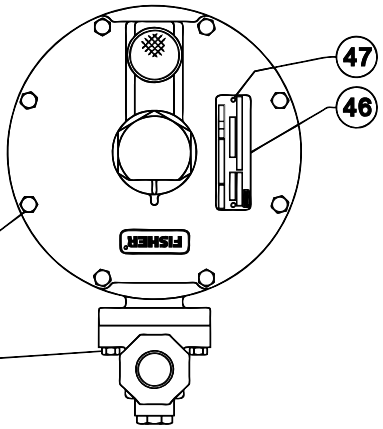
Figure 4. *Type Y291AL Pilot Interior Assembly*

Types Y291A and Y291AL (Figures 4 and 5)

Key	Description
1	Body Assembly
2	Cap Screw
3	Spring Case Assembly
4	Lower Diaphragm Casing
5	Orifice
6	Spring
7	Diaphragm Head
8	Pusher Post
10	Diaphragm
11	Body Seal O-ring
12	Insert Seal O-ring
13	Disk Assembly
14	Stem
16	Lever Assembly
17	Machine Screw
18	Guide Insert
19	Upper Spring Seat
20	Adjusting Nut
21	Hex Nut
22	Closing Cap
23	Hex Nut
24	Cap Screw
25	Closing Cap Gasket
26	Vent Assembly
31	Throat Seal O-ring
33	Machine Screw
35	Adjusting Screw
36	Washer
38	Cap Screw
41	Back Disk Spring
42	Back Body Seal O-ring
43	Back Body Cap
44	Disk Spacer
45	Lower Head Gasket
49	Backup Ring
50	Heavy Diaphragm Head Assembly



TYPE Y291A PILOT INTERIOR ASSEMBLY



TYPE Y291A PILOT EXTERIOR ASSEMBLY

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☐ - APPLY LUBRICANT (L) / SEALANT (S)
PARTS NOT SHOWN 23

Figure 5. *Type Y291A Pilot Assembly*

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